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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 05/05/2008

Marshall & Melhorn
Four SeaGate
8th floor
Toledo, OH 43604

EXAMINER

JAGAN, MIRELLYS

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 05/05/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,948

08/18/2005

Daniel Matter

1-16941

3506

TITLE OF INVENTION: THERMAL GAS FLOWMETER COMPRISING A GAS QUALITY INDICATOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	08/05/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,948	08/18/2005	Daniel Matter	1-16941	3506

TITLE OF INVENTION: THERMAL GAS FLOWMETER COMPRISING A GAS QUALITY INDICATOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	08/05/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
JAGAN, MIRELLYS	2855	374-014000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/524,948

Examiner

Mirellys Jagan

Applicant(s)

MATTER ET AL.

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 4/14/08.
2. ☒ The allowed claim(s) is/are 1 and 4-15.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>11/1/07</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Mark Hixon on April 28, 2008.

3. The application has been amended as follows:

a. Claim 1 will be replaced with the following claim:

-- Claim 1: A method for measuring a meterable gas energy supply in the private, public or industrial sphere, utilizing sensor signals (S) that are proportional to a flow rate of the gas, the method comprising:

determining the signals using a gas meter by means of a thermal flow sensor, the sensor signals (S) being output as at least one of energy value signals (S_E) and corrected mass flow rate signals (S_M) based on a calibration of the gas meter as energy meter or a mass flow rate meter, wherein:

a) a gas type is determined by the gas meter insofar as a non-combustible gas mixture is differentiated from a combustible gas mixture;

b) the gas meter is operated with a calibration in mass or standard volume units (l/min) in the presence of a non-combustible gas mixture, and is operated with a calibration in energy units (kWh) in the presence of a combustible gas mixture;

c) at least one gas type-dependent parameter of the gas mixture is determined by means of a thermal gas quality sensor;

d) the gas mixture is identified as combustible or non-combustible by comparing the at least one gas type-dependent parameter with known values of the parameter for known gases or gas mixtures;

e) the thermal flow sensor provides the function of the gas quality sensor, the gas mixture being guided over a first temperature sensor, a heating element, and a second temperature sensor of the thermal flow sensor; and

f) the corrected mass flow rate signals (S_M) are determined from a difference of temperature signals of the temperature sensors, and the gas type-dependent parameter is determined from a sum of the temperature signals or from the temperature signal of the first temperature sensor alone. --

b. Claim 4: Lines 1-7 have been replaced with the following:

-- Claim 4: The method according to claim 1, wherein:

- a) the thermal flow sensor determines a measured heat conductivity (λ) as the gas type-dependent parameter, which is tested for correspondence to a heat conductivity value corresponding to 0.0260 W/mK for nitrogen, 0.0263 W/mK for oxygen, 0.0261 W/mK for air, or 0.0168 W/mK for carbon dioxide, a prescribable tolerance of $\pm 10\%$ for each of nitrogen, oxygen, air, and carbon dioxide being taken into account, --
- c. Claim 5: "a measured heat capacity (c)" will be replaced with --the parameter is a measured heat capacity (c), which-- in line 2.
- d. Claim 6: "in particular natural gas," will be deleted from line 3; and "in particular nitrogen or air," will be deleted from lines 3-4.
- e. Claim 7 will be replaced with the following claim:
- Claim 7: The method according to claim 1, wherein a consumed supply of gas energy is integrated in the gas meter; the consumed supply of gas energy is stored intermediately when switching the calibration to mass or standard volume units (l/min); and the consumed supply of gas energy is used as start value when switching the calibration back to energy units (kWh).—
- f. Claim 8 will be replaced with the following claim:

--Claim 8: The method according to claim 1, wherein the corrected mass flow rate signals (S_M) are stored in mass or standard volume units (l/min) in the gas meter; and

a) the corrected mass flow rate signals (S_M) are further incremented when switching the calibration to energy units (kWh); and

b) the corrected mass flow rate signals (S_M) are stored intermediately, and are used as start values or are set back to zero as a start value when switching back to mass or standard volume units (l/min).--

g. Claim 9 will be replaced with the following claim:

-- Claim 9: The method according to claim 1, wherein:

a) the gas meter displays whether it is in contact with a combustible gas, a non-combustible gas, or a combination thereof by means of an indicator or display;

b) mass or standard volume units (l/min) are indicated, and energy units (kWh) are indicated only upon a first contact with a combustible gas due to a default setting of the gas meter;

c) during assembly, the calibration is switched automatically from mass or standard volume units (l/min) for a non-combustible gas to energy units (kWh) for a combustible gas by means of a first initialization of the gas meter; and

d) a manipulation indicator of the gas meter is activated upon contact with a non-combustible gas, then a combustible gas, and then a non-combustible gas again. --

h. Claim 10 will be replaced with the following claim:

--Claim 10: The method according to claim 1, wherein:

a) sensor signals (S) dependent upon the flow rate of a calibration gas are determined for calibrating the gas meter as an energy meter and are stored in the gas meter in the form of a sensor calibration curve ($F(S)$), the sensor calibration curve ($F(S)$) being proportional to uncorrected mass flow rate signals (S_m) determined by the thermal flow sensor;

b) the corrected mass flow rate signals (S_M) are obtained by correcting the uncorrected mass flow rate signals (S_m) with a signal conversion factor; and

c) the energy value signals (S_E) are obtained from multiplying the corrected mass flow rate signals (S_M) with a heat value factor for a basic gas mixture, the energy value signals (S_E) indicating a gas consumption in energy units (kWh).--

i. Claim 12 will be replaced with the following claim:

--Claim 12: A gas meter for measuring a meterable gas energy supply in the private, public or industrial sphere, the gas meter having a thermal flow sensor that is also used to determine a gas composition of the gas supply, and is calibrated in energy units (kWh) when used as energy meter, wherein:

a) the gas meter is calibrated in mass or standard volume units (l/min) when used as a mass flow rate meter;

b) the gas meter has a gas quality sensor which generates a discrimination signal, as a function of a gas type-dependent parameter in order to differentiate a combustible gas mixture from a non-combustible gas mixture; and

c) the gas meter can be switched between an operation as energy meter or an operation as a mass flowmeter based on the discrimination signal.--

j. Claim 13: “which” will be replaced with --that-- in line 3; and --of the gas flow-- will be added after “downstream” in line 3.

k. Claim 14: “, in particular with extensively static gas” will be deleted from the last line.

l. Claim 15 will be replaced with the following claim:

-- Claim 15: The gas meter according to claim 12, wherein:

a) the gas meter has an indicator or a display for gas quality, which comprises the presence of a calibration gas, a combustible gas, a non-combustible gas, or a combination thereof;

b) the gas meter has a manipulation indicator that can be activated when the gas changes from a non-combustible gas to a combustible gas, and then back to a non-combustible gas;

c) the gas meter has a measuring and evaluating unit for determining energy consumption values (S_E) and/or mass flow values (S_M); and

d) the gas meter has separate data memories for storing energy consumption values (S_E) and mass flow rate values (S_M). --

4. The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose or suggest the following in combination with the remaining limitations of the claims:

A method for measuring gas consumption, wherein the thermal flow sensor provides the function of the thermal gas quality sensor that determines at least one gas-type dependent parameter of the gas mixture (see claim 1).

A gas meter, wherein the gas meter has a thermal flow sensor that is also used to determine the gas composition of the gas supply (see claim 12).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is (571) 272-2247. The examiner can normally be reached on Monday-Friday from 12PM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gail Verbitsky/
Primary Examiner, Art Unit 2855

MJ
April 28, 2008